

In the Claims

1 1. (original) A wireless mobile communications network including a base station
2 and a plurality of mobile nodes, comprising:
3 a first mobile node configured as a major node to communicate information
4 directly with the base station via a network link; and
5 a second mobile node configured to communicate the information indirectly
6 with the base station via a local link with the major node and the network link from
7 the major node to the base station to form a locally linked mobile network within
8 the wireless mobile communications network.

1 2. (original) The wireless mobile communications network of claim 1 wherein each
2 mobile node further comprises:
3 a header detector, coupled to a receiver and a decoder, configured to detect a
4 header in a frame used to communicate the information;
5 a message processor, coupled to the header detector and a transmitter,
6 configured to route the frame over the network link and the local link.

1 3. (original) The wireless mobile communication network of claim 2 wherein the
2 header detector is connected to an output of the decoder and the locally linked
3 mobile network operates asynchronously.

1 4. (original) The wireless mobile communication network of claim 2 wherein each
2 mobile node further comprises a GPS receiver and the locally linked mobile
3 network operates synchronously.

1 5. (original) The wireless mobile communication network of claim 2 wherein the
2 major node communicates the frame while in standby mode, and the minor node
3 receives the frame in active mode.

1 6. (original) The wireless mobile communications network of claim 2 wherein the
2 mobile nodes are cellular telephones.

1 7. (original) The wireless mobile communications network of claim 1 wherein each
2 mobile node further comprises:
3 a display, coupled to the message processor, to display a warning message
4 when the mobile node communicates information with the base station via the
5 network link and with the minor node via the local link.

1 8. (currently amended) The wireless mobile communications network of ~~claim 1~~
2 claim 2 wherein each frame includes a header.

1 9. (original) The wireless mobile communications network of claim 8 wherein the
2 header includes a code word, and control information.

1 10. (original) The wireless mobile communications network of claim 9 wherein the
2 code word is a Walsh code word.

1 11. (original) The wireless mobile communications network of claim 9 wherein the
2 code word is a forward code word and the control information includes a list of a
3 plurality of major nodes and a list of a plurality of minor nodes.

1 12. (original) The wireless mobile communications network of claim 9 wherein the
2 code word is a destination code word and the control information identifies the
3 minor node and the major node.

1 13. (original) The wireless mobile communications network of claim 9 wherein the
2 code word is a routing code word and the control information identifies the major
3 node and the control information indicates an amount of available bandwidth.

1 14. (original) The wireless mobile communications network of claim 9 wherein the
2 code word is a receive code word.

1 15. (original) The wireless mobile communications network of claim 2 wherein the
2 message processor of the major node replaces a forward code word in a header of
3 the frame with a receive code word, the forward code word identifying the major
4 node and the receive code word identifying the minor node.

1 16. (original) The wireless mobile communications network of claim 1 wherein the
2 base station monitors bandwidth of the locally linked mobile network.

1 17. (currently amended) The wireless mobile communications network of claim 1
2 wherein a ~~size and shape~~ configuration of the nodes of the locally linked mobile
3 network is adaptively adjusted by the basestation depending on need, traffic type,
4 link quality, coverage, utilized bandwidth, and mobility.

1 18. (original) The wireless mobile communications network of claim 1 wherein
2 each mobile node monitors a quality of the network link with the base station.

1 19. (original) The wireless mobile communication network of claim 4 wherein the
2 GPS receiver estimates position, speed, and bearing of the mobile node.

1 20. (original) The wireless mobile communication network of claim 4 wherein each
2 mobile node uses channel quality and mobility characteristics to determine
3 suitability for operating as the major node.

1 21. (original) The wireless mobile communication network of claim 1 wherein the
2 locally linked mobile network includes a plurality of major nodes configured to
3 communicate information with each other and the minor node.

1 22. (original) The wireless mobile communication network of claim 1 wherein the
2 base station includes a memory to store a configuration list to associate the major
3 node with the minor node.

1 23. (original) The wireless mobile communication network of claim 22 wherein the
2 minor node is associated with a plurality of major nodes.

1 24. (original) The wireless mobile communications network of claim 1 wherein
2 communicating of the information is dynamically routed to optimize a quality of
3 service of the wireless mobile communications network and the locally linked
4 network.

1 25. (original) The wireless mobile communications network of claim 1 wherein the
2 locally linked mobile network operates in multicast mode.

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4 26. (original) The wireless mobile communications network of claim 2 wherein
5 each frame is encrypted using a pseudo random number sequence.

1 27. (original) The wireless mobile communication network of claim 1 wherein the
2 major node operates in active mode while receiving low bandwidth frames intended
3 for the major node, and high bandwidth frames intended for the minor node.

1 28. (original) The wireless mobile communications network of claim 1 including a
2 plurality of major nodes and the base station selects a particular one of the plurality

3 of major nodes to communicate with the minor node based on available bandwidth
4 between the major node and the base station.

1 29. (currently amended) The wireless mobile communications network of claim 1
2 including a plurality of base stations and a plurality of major nodes and minor ~~and~~
3 ~~major-connecting~~ nodes communicating with each other via network links and local
4 links.

1 30. (original) The wireless mobile communications network of claim 29 wherein a
2 first major node communicates with a first base station and a first minor node, and a
3 second major node communicates with a second base station and a second minor
4 node to enable the first and second minor nodes to communicate indirectly with
5 each other via the first and second major nodes and the first and second base
6 stations.

1 31. (original) The wireless mobile communications network of claim 29 wherein
2 minor nodes are dynamically assigned to different major nodes depending on a
3 quality of service of the network link and the local link.

1 32. (original) The wireless mobile communications network of claim 1 further
2 including an end of transmission signal to indicate an end of communicating the
3 information.

1 33. (original) A method for communicating information in a wireless mobile
2 communications network including a base station and a plurality of mobile nodes,
3 comprising:
4 communicating information directly between a first mobile node configured
5 as a major node and the base station via a network link; and
6 communicating the information indirectly between the base station and a
7 second mobile node configured as a minor node via the network link between the
8 base station and the major node and a local link between the major node and the
9 minor node.

1 34. (original) The method of claim 33 further comprising:
2 detecting a header of a frame received in the major node; and
3 routing the frame to the minor node via a message processor of the major
4 node.

1 35. (currently amended) In a wireless mobile communications network that includes
2 a base station and a plurality of mobile nodes, each mobile node comprising:
3 a receiver coupled to an antenna;
4 a header detector coupled to the receiver to detect a header in a received
5 frame from the base station;
6 a decoder coupled to the header detector to decode the received frame, the
7 detected frame to be transmitted to another mobile node;
8 a message processor to reformat the frame;
9 an encoder to encode the reformatted frame; and

10 a transmitter to transmit the encoded frame to the other mobile node.

1 36. (original) The mobile node of claim 35 wherein the header detector is connected
2 to an output of the decoder and the plurality of mobile nodes operate
3 asynchronously.

1 37. (original) The mobile node of claim 35 wherein each mobile node further
2 comprises a GPS receiver and the plurality of nodes operate synchronously.

1 38. (original) The mobile node of claim 35 wherein the mobile node communicates
2 the frame while in standby mode, and the other mobile node receives the frame in
3 active mode.

1 39. (original) The mobile node of claim 35 wherein the header is a forward header
2 that identifies the other mobile node.

1 40. (original) The mobile node of claim 35 further comprising:
2 a display, coupled to the message processor, to display a warning message
3 when the mobile node is communicate information between the base station and the
4 other mobile node.

1 41. (original) The mobile node of claim 35 wherein the mobile node monitors a
2 quality of the network with the base station.

1 42. (original) The mobile node of claim 1 wherein the mobile node is a cellular
2 telephone.

1 43. (original) The mobile node of claim 1 wherein the mobile node is a palm top
2 computing device.